

**BEFORE THE PUBLIC UTILITIES COMMISSION
OF THE STATE OF CALIFORNIA**



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Application of Southern California Edison Company
(U 338-E) for Approval of the Results of Its
2013 Local Capacity Requirements Request for
Offers for the Moorpark Sub-Area.

Application 14-11-016
(Filed November 26, 2014)

**OPENING BRIEF
OF THE WORLD BUSINESS ACADEMY**

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I. INTRODUCTION

Pursuant to Rule 13.11 of the Commission's Rules of Practice and Procedure, and the March 13, 2015 Assigned Commissioner's Ruling and Scoping Memo ("Scoping Memo"), the World Business Academy ("Academy") submits this Opening Brief on the issues addressed in the Scoping Memo and in the evidentiary hearings held on May 27, 28 and 29, 2015 ("Evidentiary Hearings").

This Opening Brief focuses on the following issues set forth in Section 2 of the March 13, 2015 Scoping Memo¹:

"3. Are the results of SCE's 2013 LCR RFO for the Moorpark sub-area a reasonable means to meet the 215 to 290 MW of identified LCR need determined by D.13-02-015?

. . . .

"6. Is the 54 MW Ellwood Refurbishment project appropriate for the

¹ Scoping Memo, at pp. 4-5.

Commission to consider in this proceeding and, if so, is the contract reasonable?

"7. Is the contract with NRG California South LP, for a 0.5 MW storage project, reasonable?"

From the Academy's perspective, the key issue addressed in the Evidentiary Hearings held in this case is the unreasonableness of the proposed peaker plants in view of State policy and GHG reduction targets. The Academy's un-rebutted testimony that was admitted into evidence during the Evidentiary Hearings, as well as certain specific admissions made by Southern California Edison ("SCE") witnesses on cross-examination in said hearings, demonstrates persuasively that the two gas-fired projects that SCE proposes to develop -- specifically the 262 MW single-cycle combustion turbine sponsored by NRG Energy Center Oxnard LLC ("Oxnard"), as well as the proposed 54 MW refurbishment of the existing peaker plant by NRG California South LP in the Goleta neighborhood of Ellwood ("Ellwood") -- are incompatible with California's stated policy to achieve dramatic reductions in GHG emissions over the next 35 years.

It would therefore be irresponsible, imprudent, and unwise, as well as directly contrary to State policy, for this Commission to approve yet more conventional gas-fired generation facilities to meet system reliability needs, especially in view of the fact that numerous developed technologies enabling the capture, storage, and strategic generation of renewable energy are: (1) already readily available on the market; (2) environmentally superior to the proposed peaker

plants in every respect; and (3) can be developed, installed and made operational as quickly, or even more quickly, than the proposed peaker plants. For these reasons, the Commission should direct SCE to include this 319 MW of needed new resources as part of an all-source Request for Offers similar in scope and timing to its Preferred Resources Pilot Project in Orange County.²

The Academy also endorses the evidence provided, and cross-examination offered, by the Sierra Club, CEJA, CBD and the City of Oxnard as strong support for the propositions that: (1) the locations proposed for the Oxnard and Ellwood peaker plants are sub-optimal and hazardous to adjacent communities, and (2) the Commission should either require SCE to utilize Preferred Resources to meet LCR need or move the Oxnard and Ellwood plants to less environmentally exposed locations that are not located within proximity to population centers. The Academy will not summarize or reiterate that evidence herein, as we trust that those other parties will also amply and persuasively argue in their respective Opening Briefs the reasons why the gas-fired generation proposed in this proceeding is a bad choice for California ratepayers and should therefore be disapproved.

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² See, Opening Testimony of Bill Rogers, P.E. on Behalf of Center for Biological Diversity, dated April 8, 2015 (“Rogers Testimony”), pp. 24-25: “. . . given the quantities of additional unanticipated (at the time D.13-02-015 was issued) preferred resources that will be added to the Big Creek/Ventura LCR over the next several years and the relatively near-term 2017 determination that will be made by SCE regarding the success of the 300 MW Orange County preferred resources pilot project for displacing gas-fired generation, it would be prudent to defer any additional procurement authorizations in the Moorpark sub-area until the results SCE’s 3010 MW Orange County preferred resources pilot project are available.”

II. THE ACADEMY'S TESTIMONY PROVIDES PERSUASIVE EVIDENCE WHY THE GAS PLANTS SHOULD BE DISAPPROVED

The Academy's own un-rebutted testimony offers three main reasons why the gas-fired plants proposed in this proceeding should not be approved: (a) the gas turbines that are the subject of this proceeding are uneconomic when compared to alternative technologies; (b) the gas turbines that are the subject of this proceeding are a poor choice from an environmental perspective; and (c) the Commission's approval of 319 more megawatts of gas turbines would violate California's well-established public policy preference for non-GHG-emitting preferred resources. Each of these reasons will be taken up below in more detail and subsequently informs our response to the issues listed above.

A. The Gas Turbines Subject to this Proceeding Are Not Cost-Effective When Compared to Preferred Resources

The Testimony of Robert Perry ("Perry Testimony"), entered into the record as Exhibit No. WBA-3,³ compared industry-recognized data concerning the environmental and economic costs of the proposed single-cycle gas turbine peaker plant versus a similar facility comprised of fuel cells, particularly fuel cells running on hydrogen, and based on this analysis, demonstrated that the overall cost of energy from fuel cells, taking environmental externalities into account, is lower than the cost of energy from traditional gas turbines. The Academy believes this analysis will also yield similar results when applied to energy storage technologies

³ RT, May 27, 2015, p. 160.

that offer superior dispatchability and ancillary services to smooth renewable intermittency and grid fluctuations.

In reaching this conclusion, Mr. Perry relied primarily on a November 2014 report prepared by Lazard regarding its levelized cost of energy (“LCOE”) analysis of conventional and renewable technologies (“Lazard Report”)⁴, where the highest unsubsidized LCOE value assigned to fuel cells (\$176) is less than the lowest such value assigned to gas peaker plants (\$179).⁵ Based on the ranges provided in the Lazard Report, the average unsubsidized LCOE of fuel cells (\$145.50 = the average of \$115 and \$176) is also \$59 lower (28.85%) than the unsubsidized LCOE to build a natural gas peaker plant (\$204.50 = the average of \$179 and \$230).⁶

Mr. Perry's analysis also incorporated a 2011 study on the added value of fuel cells prepared by the National Fuel Cell Research Center at the University of California, Irvine (the “NFCRC Report”).⁷ The NFCRC Report evaluates fuel cells from a wide range of data, including the additional value from avoided health costs and emissions that was excluded in the Lazard Report. Mr. Perry's analysis demonstrates that after incorporating the benefit calculations of avoided health costs and emissions provided in the NFCRC Report, the savings for adopting fuel cell

⁴ See, Lazard Ltd., [Lazard’s Levelized Cost Of Energy Analysis — Version 8.0](#), Sept. 2014. Lazard has been publishing versions of this study since 2008.

⁵ See, Exhibit WBA-3, pp. 23-24.

⁶ *Id.*

⁷ *Id.*

technology over a gas peaking plant increases to 55.89%, for a net LCOE of \$90.20/MWh.⁸

Mr. Perry further notes that the Lazard Report excludes a number of other important factors that would have produced an even more lopsided LCOE cost advantage for fuel cells over gas turbines. Again, to quote from the report itself:

"Other factors would also have a potentially significant effect on the results contained herein, but have not been examined in the scope of this current analysis. These additional factors, among others, could include: capacity value vs. energy value; *stranded costs related to distributed generation* or otherwise; network upgrade, transmission or congestion costs; integration costs; and costs of complying with various environmental regulations (e.g., carbon emissions offsets, emissions control systems). *The analysis also does not address potential social and environmental externalities*, including, for example, the social costs and rate consequences for those who cannot afford distribution generation solutions, *as well as the long-term residual and societal consequences of various conventional generation technologies that are difficult to measure* (e.g., nuclear waste disposal, environmental impacts, etc.)" [Emphasis added.]⁹

Finally, Mr. Perry points out why, as part of the cost effectiveness evaluation of this proposed PPTA, given the inherent price volatility of a finite resource such as natural gas, it is reasonable to foresee that the cost per MWh of power generated by the proposed gas turbines could eventually be two or even three times as

⁸ *Id.*

⁹ Exhibit WBA-3, p. 25.

expensive as power generated by fuel cells and storage technologies whose production costs are trending downward due to increasing economies of scale.¹⁰

Weaving all these various strands together (including the range of values from health benefits and avoided emissions of CO₂ as well as of criteria pollutants, including NO_x, SO_x, VOC, PM₁₀ and PM_{2.5}) in order to calculate the additional value that can be realized by ratepayers by using fuel cells as opposed to conventional gas-fired facilities, Mr. Perry calculated the additional fuel cell value from these benefits and found that in a scenario with a fuel cell plant operating on natural gas and using CCHP efficiency measures during 75% of its operations, the average estimated benefit (or cost reduction) from avoided health costs and emissions was \$55.30/MWh. Subtracting this estimated benefit from Lazard's average LCOE of \$145.50, the net cost of using fuel cells was \$90.20/MWh, which is **over 126% less than** the \$204.50/MWh average LCOE assigned to gas peaker plants in the Lazard Report.¹¹ In other words, the gas turbines, which are the subject of this proceeding, are not cost-effective when compared to clean advanced technologies that avoid costs related to emissions.

B. The Gas Turbines Subject to this Proceeding Are a Poor Choice from an Environmental Perspective

In addition to addressing why the gas turbines proposed in this proceeding are not cost-effective, Mr. Perry's un-rebutted testimony also demonstrates why fuel

¹⁰ Exhibit WBA-3, p. 32-33.

¹¹ Exhibit WBA-3, p. 28.

cells would be a far preferable choice of technology from an environmental perspective, which should include the following considerations:

(1) Flexibility to Further Reduce GHG Emissions Using Renewable Feedstocks (Hydrogen and Biofuels). Over its 25- to 30-year lifespan, a natural gas peaking plant will operate primarily on one type of fuel: natural gas extracted using fracking operations that emit methane (a greenhouse gas many multiples of times more potent than CO₂ on initial release), consume precious water supplies and rely on a mixture of chemicals that invariably enters our groundwater reserves. By contrast, developing fuel cell facilities in lieu of traditional gas turbines preserves the option to transition to carbon-free operation utilizing 100% renewable fuel in the form of hydrogen produced from renewable sources and gray water or biogas generated from waste treatment facilities.¹²

(2) Modularity, Small Footprint and Quiet Acoustics of Battery and Fuel Cell Plants Allow for Both Centralized and Distributed Deployment. Unlike gas-fired facilities, whose loud acoustic signature requires either development in sparsely populated areas or limited operating hours, the compact design and extremely quiet acoustics of battery and fuel cell plants allows for siting at or near the point of use in densely populated areas. These non-intrusive characteristics allow battery and fuel cell systems to be sited and installed in a relatively short period of time, and the costs associated with long lead times for siting, permitting and construction are largely avoided. Low emissions and quiet operation also mean

¹² Exhibit WBA-3, pp. 28-29.

that battery and fuel cell systems can be rapidly deployed with little to no “NIMBY” opposition from the local community.¹³

(3) Emissions of Criteria Pollutants. The record is replete with references to the need for the proposed gas turbines to obtain air quality permits from the Air Pollution Control Districts of Santa Barbara and Ventura Counties addressing the emission of criteria pollutants (including NOX, SOX, VOC, PM10 and PM2.5) from those facilities.¹⁴ By contrast, battery and/or fuel cell facilities (that emits only water vapor) would **NOT** require such an air permit.

Unlike gas-fired turbines, battery and/or fuel cell plants can be sited in any residential or commercial area, provide vastly superior dispatchability and ancillary services, are acoustically benign and do not release criteria pollutants that have negative health effects on local populations. These advantages make permitting and siting fuel cells much easier than siting gas turbines, thereby making their integration in populated areas much easier than is the case for gas turbines.¹⁵ In other words, the gas turbines, which are the subject of this proceeding, are a poor choice from an environmental perspective, especially when compared with quiet, non-emitting fuel cells and battery storage plants.

Thus, if the Commission allows the proposed peaker facility to move forward without directing the parties to seriously consider alternative technologies that are environmentally superior in all respects and that will ultimately be a better

¹³ Exhibit WBA-3, pp. 29-30.

¹⁴ See, e.g., RT, May 27, 2015, pp. 93-98.

¹⁵ Exhibit WBA-1 (Testimony of Rinaldo S. Brutoco), p. 33.

deal for ratepayers, it will have sentenced the City of Oxnard and the Ellwood community to at least 20 years of living next to a large, noisy, highly visible centralized plant that has no prospects for significantly reducing carbon emissions during its useful lifespan.

C. The Commission's Approval of 319 More Megawatts of Gas Turbines Would Be Bad Public Policy

The Testimony of Rinaldo Brutoco, entered into the record as Exhibit No. WBA-1,¹⁶ provides the Academy's policy perspective, explaining why it would be irresponsible, ill-considered and unwise, as well as directly contrary to state policy, for this Commission to approve yet another conventional gas-fired generating facility to meet system reliability needs when there are other promising technologies already available on the market that will have fewer environmental externalities than gas-fired peakers, that will actually move the state forward toward meeting its ambitious clean energy goals (which gas-fired peakers will not do) and that will not, in the long term, put ratepayers at risk of market price spikes due to the intrinsic volatility of natural gas prices.

It is not the Academy's purpose to reiterate that testimony in this Opening Brief. However, a few choice passages from Mr. Brutoco's Testimony are worth repeating here, if for no other reason than to re-emphasize the Commission's obligation to implement California's well-established clean energy policies in a faithful and responsible manner.

¹⁶ RT, May 27, 2015, p. 17.

"Rather than relying exclusively on inefficient traditional gas-fired peaker plants, SCE should research and make a serious, credible effort to enter into contracts for the distributed installation of hybrid storage and power generation plants utilizing photovoltaics (PV) and advanced fuel cells, the latter of which can initially be operated using renewable or conventional natural gas and then easily converted to use renewable-based hydrogen as a feedstock, once sufficient infrastructure to manufacture hydrogen from surplus generated renewable energy is developed. Such baseload plants, when combined with proven lithium-ion and/or flow battery technologies capable of instantly providing dispatchable power, will provide the nucleus and foundation towards the development of a community microgrid system that is 100% reliable and immune to the inherent vulnerabilities and limitations of the particular local transmission system connected to the area and California's current antiquated system of centralized energy generation and transmission in general."¹⁷

"Developing an energy procurement strategy that seeks opportunities to transform our current energy infrastructure would be infinitely more far-sighted and in line with California's long-term sustainable energy vision than the obsolete, inefficient and dirty gas-fired resources that SCE is proposing to contract for in this Application. Such an opportunity currently exists within the Moorpark Sub-Area and the Commission should follow the precedent set by ALJ Yacknin in her

¹⁷ Exhibit WBA-1, p. 2.

proposed decision in the Commission's Carlsbad proceeding requiring San Diego Gas & Electric to conduct an RFO solicitation in order to strictly adhere to State policy and priorities regarding the Loading Order as expressed in the Commission's Track 4 decision."¹⁸ (Footnotes within quoted text are omitted.)

"However, we have the technology and the capital to quickly transition to the next energy paradigm; a system for powering our lives that does not add greenhouse gas to the atmosphere. The plummeting cost for this technology will drive down the cost of energy for all human needs, including water desalinization, as more machines are mass produced to collect 100% renewable energy, electrolyze it at increasingly lower prices (*e.g.*, in the last 15 years, the cost for a kilowatt of solar energy has dropped by 90% and 75% for wind due to mass production of solar cells and windmills), then use that "green hydrogen" to power our increasingly demanding requirements for electricity.

"A system now exists that can harness the almost limitless energy provided by the sun and the earth and in doing so, provide abundant energy for the effort to re-stabilize our planet. One-hundred-percent carbon-free, nuclear-free energy is not only possible; it is vital to the future of our civilization. And, this energy will be created locally in the years ahead from renewable resources where the excess generating capacity during peak performance hours is electrolyzed into hydrogen to address diurnal fluctuations and supply base power on demand. As a result, long-

¹⁸ Exhibit WBA-1, p.5.

distance transmission lines, invented in the 19th century, will become an artifact of the past. We must move as quickly as possible to this new energy paradigm."¹⁹

III. THE RESULTS OF SCE'S 2013 LCR RFO FOR THE MOORPARK SUB-AREA ARE NOT A REASONABLE MEANS TO MEET THE 215 TO 290 MW OF IDENTIFIED LCR NEED DETERMINED BY D.13-02-015

The development and operation of the proposed Oxnard and refurbished Ellwood peaker plants, which comprise over 95% of the procurement requested in this Proceeding, is not reasonable in that: (1) under the best circumstances, the proposed refurbishment of Ellwood will only serve the energy needs of the larger Moorpark Sub-Area at the expense of adjacent Ellwood residents; (2) in the event of a transmission failure, the plant's 54 MW capacity will be insufficient to cover the shortage resulting from rerouting power to the 66 kV sub-transmission lines; and (3) in the event of a transmission failure, the plant will operate far outside its intended parameters, subjecting the primarily residential area, and particularly the school children attending the adjacent elementary school located less than 1,000 feet from the facility site, to vastly higher emissions of hazardous particulates, which have been known to cause major adverse medical conditions, including cancer.

If approved and constructed, these plants will presumably only be operating at times when there is insufficient energy in the transmission grid to serve local residents, who will be relegated to receive power from a nearby facility that exposes

¹⁹ Exhibit WBA-1, p. 22.

them to carbon and noxious fine particulate emissions, and levies upon them the additional cost of adverse health impacts.

Let's be clear: there is no disagreement that local generation is desperately needed in South Santa Barbara County. In his cross-examination testimony during the Evidentiary Hearings, SCE executive Ranbir Singh made the following observations:

"The statement here is saying there's a risk of a broad outage if those transmission lines were to go down. And having generation in the Goleta sub-area would mitigate some of that risk because you would not be dependent on those transmission lines to get energy into the sub-area.

". . . when we looked at the quality considerations, it was determined that while having the Elwood facility would not meet the entire need of that area, if these lines went out, it would supply a substantial portion of that need. And. It would be better than having nothing at all."²⁰

The above excerpt reveals SCE's real priorities in addressing this issue: they appear to be more concerned with developing a reactive solution to a likely failure in the transmission grid than to providing a permanent, "best fit" solution for local residents that actually reduces local reliance on the broader transmission grid.

Under SCE's proposed Ellwood "solution," there are only two actual future scenarios: (i) the transmission lines do not fail (an outcome increasingly unlikely with the passage of time) and the peaker plant only operates when the transmission grid cannot provide sufficient energy to the community (a situation likely to become more prevalent with the expansion of the electric transportation sector and

²⁰ Testimony of Ranbir Singh, RT May 27, 2015, pp. 29-30.

infrastructure); or (ii) the transmission lines fail, the plant is pressed into service far beyond its intended scope of operation until the one or more transmission tower(s) and line(s) are repaired over an indeterminate period in generally remote and inaccessible locations.²¹

Under cross-examination, SCE executive Colin Cushnie also acknowledged that excessive plant operations would result under the second scenario, and further acknowledged that such a scenario was the primary purpose for “refurbishing” the plant.²²

Also under cross-examination, SCE executive Jesse Bryson conceded that in the event of an extended transmission line failure that necessitated the operation of the refurbished Ellwood plant for a number of hours per year far in excess of its expected permit limitations, the plant owner/operator would have the opportunity to seek a variance from those applicable permit restrictions from the Santa Barbara County Air Pollution Control District.²³

In other words, if the reasons why SCE wants to have the Ellwood plant refurbished and available to meet local load for the foreseeable future do, in fact come to pass (*i.e.*, to address a major transmission failure on the main line that serves Southern Santa Barbara County, which is at the western tail end of SCE's service territory, or to address increased demand for power in Santa Barbara), there is a substantial likelihood that the Ellwood plant will be required (and will

²¹ Testimony of Colin Cushnie, RT, May 28, 2015, p. 283.

²² Testimony of Colin Cushnie, RT, May 28, 2015, pp. 284-285.

²³ RT, May 27, 2015, pp. 97-99.

ultimately be allowed) to operate well in excess of its permit limitations -- *i.e.*, for large parts of the day for many months in a row until such time as the hard-to-access transmission line is repaired and is again operational.

Thus, the proposed Ellwood refurbishment is nothing more than a deceitful and unjustified regulatory "bait and switch." Under either of the two realistic scenarios that purportedly justify this project, there are unacceptable social/public health and environmental costs without any accompanying decrease in reliance on an aging and vulnerable transmission infrastructure. If the transmission line holds, the plant, which will cost many tens of millions to refurbish, will largely lay fallow, resulting in a high cost of energy passed on to ratepayers due to the high cost of constructing the plant and maintaining it in "standby" mode. However, given California's ever-increasing GHG reduction goals, there is also the likelihood that the plant will need to be retired long before the end of its useful life, rendering it a "stranded asset" and an expensive liability for ratepayers.

Alternatively, when the transmission line does fail (and it will eventually), the Ellwood plant will run incessantly for an indefinite period and become a health hazard to an adjacent elementary school, assisted living facility and residential neighborhoods circling the plant's location. In either case, the community remains exclusively reliant on transmission infrastructure to provide relatively safe energy that does not expose residents to excessive emissions and the associated adverse public health impacts.

Furthermore, the proposed peaker plants do not fully address the extreme reliability constraints affecting South Santa Barbara County in a transmission failure scenario. Under such a scenario, the available capacity of the Oxnard peaker plant to serve Santa Barbara County would still be subject to the limited capacity of the 66 kV sub-transmission line, while the 54MW Ellwood peaker plant will only provide a portion of the resulting shortage, regardless of whether SCE completes its proposed upgrade to the sub-transmission line (180MW as opposed to 100MW). In either case, there will be continuous service interruptions to a significant number of ratepayers at any given time while the transmission lines are down.²⁴

Oxnard, a community that has been exposed to plant emissions for over 50 years, also faces a similar situation. Although alternative transmission lines are available during a failure, operation of the proposed Oxnard peaker plant in their backyard ultimately does not serve their needs, but those of the transmission grid. Residents can only hope that sufficient grid energy is generated elsewhere so that plant operations are kept to a minimum. However, given that plant's large footprint, the possibility that its actual operation will be very limited is highly unlikely, as the plant will likely be required to operate in order to provide energy to other locations in the western portion of SCE's service territory.

²⁴ Opening Testimony of Bill Rogers, P.E. . . . on Behalf of Center for Biological Diversity, dated April 8, 2015 ("Rogers Testimony"), p. 27. "The most limiting critical contingency for a given area may be the loss of the largest transmission line (an "N-1" event), the federal reliability Category B standard, or the loss of both the largest generator ("G-1") and the largest transmission line (a "G-1, N-1" event), which is a more conservative standard applied by CAISO in California."²⁴ A utility must be able to continue uninterrupted service under these contingency conditions."

Fifty years. That's over two generations of Oxnard residents that have had to live with continuous plant emissions, and the Oxnard peaker plant proposed in this proceeding will condemn *at least* one more generation to the same fate. Oxnard's past sacrifices over the decades should at least give them a place at the front of the line for clean, distributed renewable energy resources.

We need a better answer than the proposed plants are "better than nothing at all." A real solution would be to invest the funds allocated for these plants into technologies that will provide clean, reliable energy to the community *every single day*, with the ability to operate independently *without harming the community*. Once constructed, these advanced facilities, utilizing generated and stored renewable energy, will require little additional investment, as they will not rely on scarce fossil fuels subject to extreme price volatility.²⁵ Recent Flex Alerts by the CAISO and an emergency curtailment warning by Southern California Gas over the July 4th weekend also highlight the relative scarcity of natural gas when compared to virtually unlimited amounts of solar energy available each time the sun rises. This truly is power produced *by and for the people*.

As detailed in the Opening Testimony of Bill Rogers, P.E., submitted by CBD in this proceeding ("Rogers Testimony")²⁶, energy storage is clearly a better fit for meeting both reliability need and renewable energy integration in the

²⁵ See, "[Gas Capacity Dogs California Grid Amid Heat](http://www.argusmedia.com/News/Article?id=1069150§or=POWER®ion=ALLREGION)," Argus Media, July 10, 2015. [Link: http://www.argusmedia.com/News/Article?id=1069150§or=POWER®ion=ALLREGION](http://www.argusmedia.com/News/Article?id=1069150§or=POWER®ion=ALLREGION)

²⁶ Rogers Testimony, *supra*, pp. 19-20.

Moorpark LCR than gas fired generation facilities (*italics* added for emphasis to the quotation below):

"Shell Energy North America LLC enumerated the disadvantages of low capacity factor gas-fired generation for renewable energy integration, and the advantages of energy storage in the same application, in the A.14-07-009 proceeding²⁷:

"In order to integrate new renewable energy supplies, renewable resources must be balanced by resources that can provide frequency response and VAR support. *Peaking facilities generally have a low capacity factor (are only on-line for limited time periods), resulting in very limited ability to provide VAR support. Peaking facilities also do not provide the frequency response that is needed to stabilize the grid upon the loss of a generation unit or transmission line. In addition, due to their expected low capacity factor, peakers do not provide consistent system inertia, which is the ability of a power system to support imported energy.* The characteristics of peaking facilities raise serious questions about whether a PPTA for 600 MW of peaking capacity is consistent with the need to integrate increased renewable supplies into SDG&E' s local reliability area. . . In light of (CAISO) Mr. Sparks' expressed concern about voltage stability and "degradation of deliverability of renewable generation in the Imperial Valley," (Ex. 4 at p. 8), it is questionable whether peaking units with a low capacity factor are the best resources to meet the local reliability need created by the loss of SONGS. . . Other resources, including pumped hydro storage, provide system inertia, VAR support and frequency response, all of which are necessary to integrate renewables and provide system stability. . . *Alternative resources may have operational characteristics that are more consistent with the State's loading order and that more efficiently integrate the delivery of renewable energy* into the San Diego sub-area, but these resources may be pre-empted by the Commission's approval of the Carlsbad Energy Center PPTA."

Furthermore, the Perry Testimony states that although the Commission's

Track 1 Decision in D.13-02-015 does not mandate the procurement of any

²⁷ Exhibit PE-21, A.14-07-009, Opening Brief of Shell Energy North America (US), L.P., December 10, 2014, pp.7-8, p.10, p.16.

particular type of resource for the Moorpark Sub-Area, there are numerous references in that Decision to the preference for preferred resources as specified in the Loading Order.²⁸

Indeed, according to the Perry Testimony and the Rogers Testimony,

“SCE recommended deferring authorization for procuring additional local capacity in the Moorpark sub-area of the Big Creek/Ventura local area until the next LTPP cycle in 2014. SCE also indicated that newer technology of various sizes is more likely to be the replacement generation in the Moorpark sub-area, which may be able to be built in 5 to 7 years.”²⁹

The Academy agrees with SCE’s assessment in this specific regard, and believes that these “newer technologies” can now be built within the next 2-3 years in line with the Commission's clearly stated objectives to advance distributed energy resources. The Commission’s requirement in its Track 1 Decision in D.13-02-015 to locate resources “in a specific transmission-constrained area in order to ensure adequate available electrical capacity to meet peak demand, and ensure the safety and reliability of the local electrical grid” seems to prioritize the needs of the residents within the “transmission-constrained area”³⁰ over the broader requirements of the Moorpark Sub-Area.

The Commission's focus on moving the utilities under its jurisdiction to procure demand-side resources, preferred resources and energy storage rather than conventional gas-fired plants also places a burden on SCE to look for a “better fit”

²⁸ Exhibit WBA-3, pp. 6-9.

²⁹ See, Exhibit WBA-3, at pp. 8-9; see also, Rogers Testimony, at p. 3; see also, D.13-02-015, pp. 68-69.

³⁰ [D.13-02-015](#), pp. 2-3.

for the Santa Barbara ENA. Even SCE has acknowledged these circumstances, arguing in its comments on the Proposed Decision that led to D.13-02-015 that “newer technology of various sizes is more likely to be the replacement generation in the Moorpark sub-area.”³¹

IV. THE 54 MW ELLWOOD REFURBISHMENT PROJECT IS NOT APPROPRIATE FOR THE COMMISSION TO CONSIDER IN THIS PROCEEDING

SCE contends that the “refurbishment” of the Ellwood plant does not apply toward the LCR, as it is an existing plant whose capacity is already included in the CAISO’s capacity forecast. However, including the “refurbishment” of the 40-year-old Ellwood plant as a project within the scope of this proceeding is inappropriate, because it ignores the fact that the current plant has been virtually retired for the past ten years and that, as noted in Section III above, the “refurbished” plant, with a renewed lifespan of 30 years, will likely be called on more often as local demand grows and, in a worst case scenario, the plant will effectively operate as a baseload facility for months at a time following the failure of one or more of the high-voltage towers along the Santa Clara – Goleta transmission line.

In truth, the old Ellwood plant is being retired, and a virtually new plant will be created that is expected to operate for 30 years. Thus, the 54 MW Ellwood “Refurbishment” is neither an appropriate nor a reasonable project for Commission approval, as this proposed facility is a very poor fit for the densely populated and

³¹ [D.13-02-015](#), pp. 68-69.

extremely transmission-constrained Santa Barbara ENA, which is already subject to a potentially catastrophic failure of its high-voltage transmission system. Moreover, this proposed project is located in the rapidly developing Ellwood residential area of Goleta, less than 1,000 feet away from the local elementary school. There are also large residential tracts located on both sides of the plant site that would be adversely impacted should the plant need to operate longer hours than originally intended due to the transmission line failure.

Also, by characterizing the replacement of the primary components as “refurbishment,” SCE avoids numerous public disclosure and review hurdles required of new developments. Furthermore, if the Ellwood Plant truly were a contributing part of the area’s existing capacity, it would not, and should not, be part of a Commission proceeding with the focus of considering whether to approve projects intended to address local capacity requirement needs.

V. THE CONTRACT WITH NRG CALIFORNIA SOUTH LP, FOR A 0.5 MW STORAGE PROJECT IS REASONABLE, BUT ONLY IN THE SHORT TERM

The Academy approves any energy storage project proposed to help meet for the identified LCR need, as energy storage is critical to developing a robust distribution system utilizing significant amounts of distributed renewable energy resources, especially solar PV generation. The Academy also recognizes that for the near term, the small capacity of this proposed storage project is reasonable in that there has not been much penetration to date by intermittent renewable resources

in the Santa Barbara ENA. However, the scale of penetration by renewable resources in the Santa Barbara ENA is expected to ramp up dramatically as area communities become aware of the fragile state of the local transmission and distribution grid.

Electricity customers in this area will therefore soon be demanding a more reliable and resilient distributed solution. The Academy would simply note here that the ever-growing increase in demand for renewable generation will, in turn, require much larger procurements of storage and distributed reliability resources for the Santa Barbara ENA in future Commission proceedings.

V. CONCLUSION

For all the foregoing reasons, the Commission should find that the two gas-fired peaker projects proposed for approval in this proceeding are ***NOT*** a reasonable means to meet the 319 MW of Local Capacity Requirement identified in Commission Decision D.14-03-004. Rather, based on the compelling evidence presented in this proceeding by the Academy and other interveners, the Commission can and should find that better and ultimately more cost-effective alternatives are available to meet this need, specifically: distributed solar PV generation, battery systems for short-term storage (within the 24-hour diurnal cycle), and fuel cells for baseload energy that can initially run on conventional or renewable natural gas and be easily modified to run on renewable hydrogen within a relatively short time frame.

Indeed, Commission approval of the proposed gas peakers would directly affront California's stated policy preferences for the rapid reduction in GHG emission levels in the state and for the accelerated deployment of preferred resources to meet the state's energy needs. From this extremely important public policy perspective, the proposed gas turbine facilities are dinosaurs that will never measure up to technologies that are emissions-free and, in the case of fuel cells, can eventually transition to carbon-free operation.

Furthermore, because battery storage and fuel cells can be sited either at the precise location proposed for the gas peakers under this proceeding, and/or distributed more broadly within Southern Santa Barbara and Ventura Counties, the use of such alternative technologies would greatly increase local reliability and resiliency while at the same time protecting the environment and the health of local residents.

Given the number and scope of Commission proceedings contemplating distributed energy resources and systems, it is crucial that the Commission develop a comprehensive understanding of how future trends will impact the demand for power generation resources. In particular, the Commission needs to understand and acknowledge that society's demand for electric power will be increasing significantly, especially as the number of electric vehicles on the road continues to increase and on-going drought conditions demonstrate the need for large amounts of water desalinization. Given the state's clearly articulated policies, this additional demand needs to -- and will -- be met by clean and renewable resources. It

therefore behooves the Commission in this case not to turn its back on California's future by approving two dirty, antiquated and retrograde gas-fired plants.

Indeed, both this Commission and SCE explicitly recognize that California's energy future will look a lot different than its past and that fossil-fuel-fired gas turbine facilities will not have a role to play in that future mix. The path to this better, cleaner future is being blazed by the Commission's proceeding that has mandated its jurisdictional utilities to develop Distributed Resource Plans³² (“DRPs”). Pursuant to an Assigned Commissioner's Ruling in R.14-08-013 on February 6, 2015, each utility, including SCE, submitted a draft DRP for review and comment on July 1, 2015.³³ The Academy commends the Commission for conducting this hearing and was very pleased to see that SCE produced a comprehensive and well-considered plan that provides a level of disclosure never seen before in this industry, with tools that will allow stakeholders to evaluate and plan distributed energy projects. It should also be noted that as part of its DRP, SCE will be conducting five major pilot projects, one of which involves the development and operation of a microgrid system within a constrained area such as South Santa Barbara County. Therefore, in lieu of approving the two antiquated gas peaker projects that are the subject of this proceeding, the Academy urges the

³² Order Instituting Rulemaking Regarding Policies, Procedures and Rules for Development of Distribution Resources Plans Pursuant to Public Utilities Code Section 769, Rulemaking 14-08-013, filed August 14, 2014.

³³ See, “[Distribution Resources Plan \(R.14-08-013\)](http://www.cpuc.ca.gov/PUC/energy/drp/),” <http://www.cpuc.ca.gov/PUC/energy/drp/>

Commission and SCE to move forward as quickly as possible to develop a microgrid pilot project within the South Santa Barbara area.

Distributed Energy is California's Future

Rather than approving two dinosaurs, the Commission and SCE should begin immediately to engage communities within the Moorpark Sub-Area and work with them to develop and offer distributed energy solutions that deliver safe, reliable and resilient local renewable energy that directly serves ratepayers and is not reliant on current transmission infrastructure. Given the extreme transmission constraints affecting Southern Santa Barbara County, and the 50+ years of sacrifice by -- and the environmental injustice heaped upon -- the citizens of Oxnard and surrounding communities to provide energy to the rest of Southern California, ratepayers in the Moorpark Sub-Area deserve a distributed energy solution as soon as possible, and not 30 years after these proposed peaker plants have finally run their course.

Under this achievable, and ultimately necessary, future scenario, there is no need to spend hundreds of millions of ratepayer dollars on antiquated peaker plants operating only a few hours each day to cover foreseeable shortages in renewable energy production when there are proven technologies that can store renewable energy and provide superior ancillary services to both the distribution and transmission grids. The Commission therefore must reject SCE's application for authorization to procure power from the proposed Oxnard and the "refurbished" Ellwood plants.

Respectfully submitted,

A handwritten signature in dark ink, appearing to read "Laurence G. Chaset", written over a horizontal line.

By:

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